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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,797	10/16/2003	Sung-Hoon Lee	030681-575	5138
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EXAMINER				
BELL, BRUCE F				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
12/16/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

# Office Action Summary

## Application No.

10/685,797

## Applicant(s)

LEE ET AL.

## Examiner

Bruce F. Bell

## Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 4, 13, 15-17, 22-25 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 17, 24, 25 and 28-31 is/are allowed.
- 6) ☒ Claim(s) 4, 13, 15, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102/103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**OR**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4, 13, 15, 22, 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Antos (4312792).

Antos disclose a multi-metallic catalyst being disposed within a microporous carrier material having a porous, adsorptive, high surface area support having a surface area of about 25 to 500 meters squared per gram. Carrier material such as those of activated carbon, coke or charcoal are disclosed. See col. 6, lines 17-34. The carrier material has a pore diameter of about 20 to 300 angstroms with a pore volume of about 0.1 to about 1 cc/g and a surface area of about 100 to 500 meters squared per gram. See col. 6, line 64 - col. 7, line 2. The multi-metallic catalyst is one containing platinum and cadmium and may further contain rhenium. See col. 9, lines 40-44; col. 10, line 9-11; lines 37-42; col. 10, line 67 – col. 11, line 7; col. 12, line 15-30; col. 13, lines 11-16.

A reducing agent is contacted with the oxidized platinum group metal and cadmium containing carrier at temperatures of 450 degrees to about 1200 degrees F for about 0.5 to 10 hours. Once this condition of finely dispersed platinum group metal in the porous carrier material is achieved (appears to be alloying of the two materials), it is important that environments and/or conditions that could disturb or change this condition be avoided. See col. 13, lines 34-45.

Antos anticipates the applicants instant invention as shown by way of the disclosure above. Even though the prior art of Antos does not specifically say that the composition is alloyed, it appears from the disclosure that it is alloyed, since a reduction is performed on the two materials and these materials are impregnated into the porous carrier. Antos discloses various activated carbons can be used as the porous carrier and since graphite is a form of carbon and is well known in the art to be used as a carrier, Antos anticipates or in the alternative at least renders obvious the applicants instant invention as set forth in the instant claims. It appears that since the same materials are used in both the Antos invention and that of the instant invention that the properties of the oxygen and hydrogen binding forces are inherent in the materials absent evidence to the contrary. Therefore, the prior art of Antos anticipates or in the alternative at least renders obvious the applicants instant claims as presented.

#### ***Response to Arguments***

4. Applicant's arguments, see amendment, filed September 4, 2008, with respect to the rejection(s) of claim(s) 4, 13, 22 and 23. under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Antos under 35 USC 102(b)/103 as shown above.

***Allowable Subject Matter***

5. Claims 16, 17, 24, 25, 28-31 are allowable over the prior art of record.
6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest the use of the catalyst alloy formed within the pores of the porous carrier having an alloy composition of cadmium with either gold, silver, copper, nickel or platinum. Even though the catalyst of CdAg, CdCu, CdAu and CdNi are known, it is not known to use these catalyst in a direct methanol fuel cell.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
December 8, 2008

/Bruce F. Bell/  
Primary Examiner, Art Unit 1795